

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today
(1) was not written for publication in a law journal and
(2) is not binding precedent of the Board.

Paper No. 37

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CHRISTOPHER H. STROLLE

Appeal No. 96-4011
Application 07/996,525¹

HEARD: JANUARY 14, 1998

Before THOMAS, HAIRSTON, and CARMICHAEL, Administrative Patent Judges.

HAIRSTON, Administrative Patent Judge.

DECISION ON APPEAL

¹ Application for patent filed December 23, 1992. According to applicant, the application is a continuation-in-part of Application 07/609,536 filed November 5, 1990, now abandoned.

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This is an appeal from the final rejection of claims 1 through 4, 6, 8 through 26, 28 and 31 through 38. Claims 29 and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. In a first Amendment After Final (paper number 20), claims 3, 4 and 28 were amended, and in a second Amendment After Final (paper number 23), claim 3 was further amended.

The disclosed invention relates to a video processing system for a composite video signal that comprises a luminance signal and a chroma carrier modulated with chrominance information.

Claims 1 and 8 are illustrative of the claimed invention, and they read as follows:

1. A system for processing video information including a luminance signal and a chrominance signal, which said chrominance signal comprises a suppressed chroma carrier having a phase that at corresponding horizontal spatial locations alternates from line to line within each field and being modulated with chrominance information, and having synchronizing signals included within at least one of said luminance and chrominance signals, said system comprising:

means responding to at least one of said synchronizing signals for generating a phase alternated carrier having a phase that at corresponding horizontal spatial locations is not different from line to line within each field, but does alternate from field to field;

means for modulating said phase alternating carrier in accordance with an auxiliary signal to generate an auxiliary modulation result; and

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means for adding said auxiliary modulation result to said chrominance signal.

8. A video signal processing system for recording a wideband video signal on a limited bandwidth medium, comprising:

an input terminal for receiving a composite video signal;

signal processing means for separating said composite video signal into a first frequency band including a chrominance signal and a first luminance signal component, a second frequency band including a second luminance signal component, and a third frequency band including a third luminance signal component, said first and second and third frequency bands being contiguous frequency bands overlapping only at the edges of said first and second frequency bands and at the edges of said second and third frequency bands, said first frequency band containing higher frequencies than said second frequency band, and said third frequency band containing lower frequencies than said second frequency band;

means for generating an augmented chrominance signal by folding said second luminance signal component into said first frequency band so as to interleave with said first luminance signal component; and

means for recording said third luminance signal component and said augmented chrominance signal.

The references relied on by the examiner are:

Tanaka et al. (Tanaka)	4,554,595	Nov. 19, 1985
Moles et al. (Moles)	4,636,841	Jan. 13, 1987
Ishikawa et al. (Ishikawa)	5,063,457	Nov. 5, 1991
Ko et al. (Ko)	5,083,203	Jan. 21, 1992
Suga et al. (Suga)	5,144,453	Sept. 1, 1992

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Claims 3, 4, 6, 8 through 10, 14, 22 through 26, 28, 32 through 34 and 38 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Ishikawa.

Claims 1, 2 and 37 stand rejected under 35 U.S.C. § 103 as being unpatentable over Ishikawa in view of Suga.

Claims 15 through 17 and 19 stand rejected under 35 U.S.C. § 103 as being unpatentable over Ishikawa in view of Moles.

Claims 11 through 13, 21, 31, 35 and 36 stand rejected under 35 U.S.C. § 103 as being unpatentable over Ishikawa in view of Moles and Ko.

Claims 18 and 20 stand rejected under 35 U.S.C. § 103 as being unpatentable over Ishikawa in view of Moles and Tanaka.

Reference is made to the briefs and the answer for the respective positions of the appellant and the examiner.

OPINION

We have carefully considered the entire record before us, and we will reverse all of the rejections.

Ishikawa discloses apparatus in an extended definition television system (EDTV) for recording a wide frequency band video signal using a frequency interleaving technique (column 1, lines 10 through 27). Figure 1 in Ishikawa discloses a system for transmitting an encoded EDTV signal from terminal 19 that

includes low-band component YL of the luminance signal Y frequency interleaved with the mixed chrominance signal C and the carrier high-band luminance signal YH'. The chrominance signal C is an output from quadrature two-phase modulation circuit 5 that receives as inputs the color difference signals I and Q. The spectral arrangement of the encoded EDTV signal is shown in Figure 4(A). Figure 7 of Ishikawa shows a system for receiving the encoded signal transmitted from Figure 1, and for processing it back into the original component signals (i.e., wide-band luminance signal Y and color difference signals I and Q). The Figure 7 processing circuitry includes filters 21, 23 and 32, subtracters 22 and 24, and a multiplier 31. Figure 9 of Ishikawa discloses a VTR that records and plays back the encoded EDTV signal. Adder 47 outputs to magnetic recording/playback head 48 a frequency-modulated, low-band luminance signal (FM-YL) from high-pass filter 39 that is combined with a low-band converted carrier chrominance signal and a carrier high-band luminance signal (FC - C & YH') from low-pass filter 46. The frequency spectrum for these signals is illustrated in Figure 10(A). Figure 12 of Ishikawa is a diagram of a camera-combined type VTR that handles EDTV signals. The image sensing part 101 receives luminance signal Y, and a modulated, line sequential color

difference signal. The luminance signal Y inputs low-pass filter 103 and band-pass filter 109. The output from the low-pass filter 103 inputs both a subtracter 105 and a high-pass filter 104. The high-band luminance signal YH is subtracted from the luminous signal Y to yield a low-band luminous signal YL. The low-band luminous signal YL is frequency modulated by frequency modulator 106 into a frequency modulated, low-band luminance signal FM-YL. The high-band luminous signal output YH from high-pass filter 104 is also supplied to multiplier 107 where it is multiplied by a carrier signal from pulse generator 127 to yield a carrier high-band luminous signal YH'. The carrier high-band luminous signal YH' is then sent through low-pass filter 108. The input signal to low-pass filter 103 also passes through band-pass filter 109, demodulation circuit 110, and line concurrency circuit 111 where two difference signals are produced as inputs to the two low-pass filters 112 and 113. After the process of band limiting in the low-pass filters, the two difference signals are converted into a carrier chrominance signal C by the quadrature two-phase modulation circuit 115. The band of the carrier chrominance signal C is then limited by the low-pass filter 114. Prior to entering the mixer 121, the spectrum of the carrier chrominance signal C and that of the carrier high-band

luminance signal YH' are frequency interleaved relative to the vertical scanning frequency (column 11, lines 26 through 38). The multiplexed signal from mixer 121 is then frequency converted by frequency converter 122 before passing through low-pass filter 123. The mixer 124 mixes the frequency-modulated, low-band luminous signal FM-YL from frequency converter 106 with the frequency converted, carrier chrominance signal C' and the carrier high-band luminance signal YH" from low-pass filter 123. The mixer 124 produces a recording signal that has a frequency spectrum distribution as illustrated in Figure 10(A).

Turning first to the 35 U.S.C. § 102(e) rejection, we are mindful of the fact that anticipation is established only when a single prior art reference discloses, expressly or under principles of inherency, each and every element of a claimed invention. See RCA Corp. v. Applied Digital Data Sys., Inc., 730 F.2d 1440, 1444, 221 USPO 385, 388 (Fed. Cir.), cert. dismissed, 468 U.S. 1228 (1984).

The 35 U.S.C. § 102(e) rejection of claims 3, 4, 6 and 28 is reversed because Figures 4(A) and 10(A) of Ishikawa do not illustrate frequency spectrums in which: a first portion of the frequency spectrum is comprised of "just a region surrounding the frequency of said chroma carrier that contains said chrominance

signal as well as said first spectral portion of said luminance signal;" a third portion of the frequency spectrum is comprised of "lower frequencies of said composite video signal;" and a second portion of the frequency spectrum is "intermediate to said first and third portions of said frequency spectrum."

The 35 U.S.C. § 102(e) rejection of claims 8 through 10 and 14 is reversed because Figures 4(A) and 10(A) of Ishikawa do not illustrate first, second and third frequency bands that are "contiguous frequency bands overlapping only at the edges of said first and second frequency bands and at the edges of said second and third frequency bands," and with "said first frequency band containing higher frequencies than said second frequency band, and said third frequency band containing lower frequencies than said second frequency band." Figure 2 of appellant's drawing illustrates the claimed "overlapping" of the first, second and third frequency bands.

The 35 U.S.C. § 102(e) rejection of claims 22 through 26 is reversed because the frequency spectrums in Figures 4(A) and 10(A) of Ishikawa do not show first, second and third portions in which: the first portion is comprised of "just a region about said chroma carrier;" the third portion is comprised of "lower frequencies of said composite video signal;" and the second

portion is "extending between said first and third portions of said frequency spectrum."

The 35 U.S.C. § 102(e) rejection of claims 32 through 34 and 38 is reversed because Ishikawa does not disclose: "filter means" for filtering a composite video signal into a first frequency band including a chrominance signal and a first luminance signal component, a second frequency band including a second luminance signal component, and a third frequency band including a third luminance signal component, with the first frequency band containing higher frequencies than the second frequency band, and the third frequency band containing lower frequencies than the second frequency band; and "means for generating a transposed luminance signal by transposing frequencies of said second luminance signal component into said first frequency band so as to fold said second luminance signal component into said first frequency in accordance with a first carrier having a phase that alternates from field-to-field but not from line-to-line." The claimed fields and lines are set forth in Table 1 of appellant's disclosure (specification, page 13).

Turning next to the 35 U.S.C. § 103 rejections, we find that neither Ishikawa nor Suga teaches or would have suggested "means responding to at least one of said synchronizing signals for

generating a phase alternating carrier having a phase that at corresponding horizontal spatial locations is not different from line to line within each field, but does alternate from field to field." As indicated supra, Table 1 of appellant's disclosure shows such fields and lines. The 35 U.S.C. § 103 rejection of claims 1, 2 and 37 is, therefore, reversed.

The 35 U.S.C. § 103 rejection of claims 15 through 17 and 19 is reversed because neither Ishikawa nor Moles teaches or would have suggested the frequency bands required by claim 14.

The 35 U.S.C. § 103 rejection of claims 11 through 13, 21, 31, 35 and 36 is reversed because neither Ishikawa, Moles nor Ko teaches or would have suggested: first, second and third contiguous frequency bands that overlap at the edges as required by claims 8 and 14; and the first, second and third frequency bands, and means for generating a transposed luminance signal in accordance with a first carrier having a phase that alternates from field-to-field but not from line-to-line as required by claim 32.

The 35 U.S.C. § 103 rejection of claims 18 and 20 is reversed because neither Ishikawa nor Tanaka teaches or would have suggested the first, second and third contiguous frequency bands that overlap at the edges as required by claim 14.

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DECISION

The decision of the examiner rejecting claims 3, 4, 6, 8 through 10, 14, 22 through 26, 28, 32 through 34 and 38 under 35 U.S.C. § 102(e), and claims 1, 2, 11 through 13, 15 through 21, 31 and 35 through 37 under 35 U.S.C. § 103 is reversed.

REVERSED

JAMES D. THOMAS)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
KENNETH W. HAIRSTON)	APPEALS AND
Administrative Patent Judge)	INTERFERENCES
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)	
JAMES CARMICHAEL)	
Administrative Patent Judge)	

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Robert E. Bushnell
Attorney at Law
1511 "K" Street, N.W.
Suite 425
Washington, D.C. 20005